PRICE 15¢

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •

February 26, 1938

Piously Decapitated

See Page 133

A SCIENCE SERVICE PUBLICATION

Do You Know?

A fine crop of flax has been grown in a water solution without soil, at North Dakota Agricultural College.

The London Zoo's famous gorilla, Mok, recently died of the kidney ailment known in human beings as Bright's disease.

Air conditioning equipment is being carried on the backs of elephants to an elaborate palace that is being built in India.

The oldest family tree in the world is claimed for the Kung family of China, which traces lineage back to Confucius, who lived 2,500 years ago.

To provide telephones for farmers in remote districts of Japan, an inexpensive way of linking the phone with electric light lines has been devised.

Various rainbow colors can be given to metals by covering nickel plate with a film of copper oxide—the color produced depending on the thickness of the film.

The beautiful new Palestine Archaeological Museum in Jerusalem, which contains valuable antiquities of the Holy Land, was opened to the public in January.

Four states—Massachusetts, Connecticut, New York, and Georgia—have a cancer law, recognizing cancer as a public health problem and taking steps toward its control.

QUESTIONS DISCUSSED IN THIS ISSUE

Most articles which appear in SCIENCE NEWS LETTER *are based on communications to Science Service, or on papers before meetings. Where published sources are used they are referred to in the article.*

ANTHROPOLOGY

Did the Noble Savage have perfect teeth? page 137.

ARCHAEOLOGY

Why did ancient Peruvians show detached heads on temple sculptures? page 133.

ASTRONOMY

When does the Mohammedan new year begin? page 138.

AVIATION

Where will soaring meets be held this year? page 132.

What advantage is there in tandem propellers? page 135.

DENTISTRY

How does weather influence endocarditis? page 132.

ENGINEERING

Where is indium useful? page 136.

In what country are streamlined trains now coming into use? page 137.

ETHNOLOGY

In what way do Oriental and Pueblo war chants resemble each other? page 133.

EVOLUTION

How does altitude affect animal heredity? page 134.

FOUNDATIONS

Who has founded a new research society? page 137.

GEOLOGY

What fossils have dated scattered early Cambrian rocks? page 133.

Why have borings at Meteor Crater failed? page 134.

HOUSING

How much does the new steel farm unit cost? page 131.

HYDROLOGY

How does wind make water turn over? page 136.

MEDICINE

What does sodium sulfanilyl sulfanilate look like? page 131.

What chemical liquefies mouse cancers? page 136.

How does overweight cause heart pain? page 136.

Can heart and lungs live outside the body? page 137.

METALLURGY

How is draw-casting carried out? page 135.

MINERALOGY

Where is fluorescent ink being used? page 137.

PHYSICS

How are Swedes getting salt from the ocean? page 134.

PSYCHOLOGY

When will Baby stop crying? page 136.

RADIO

How does the robot radio alarm work? page 135.

WILDLIFE MANAGEMENT

How do mosquitoes and ducks combine to present a difficult problem? page 140.

Blindfolded judges in tests of meat flavor can identify beef and pork more often than chicken, veal, lamb, or rabbit.

Deer running wild in certain Florida swamps worry cattle owners, because the deer spread ticks to cows.

Pneumonia is most prevalent between the middle of January and the middle of February.

Japan is starting colonies of cotton planters in Costa Rica and the Dominican Republic.

SCIENCE NEWS LETTER

Vol. 33 FEBRUARY 26, 1938 *No. 9*

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 2101 Constitution Avenue, Washington, D. C., *Edited by* WATSON DAVIS.

Subscriptions—$5.00 a year; two years $7.00; 15 cents a copy. Ten or more copies to same address, 5 cents a copy. Back numbers more than six months old, 25 cents.

Members of the American Association for the Advancement of Science have privilege of subscribing to SCIENCE NEWS LETTER at the reduced price of $3 per year. Applications for this privilege should be accompanied by privilege card obtained from the Permanent Secretary, A.A.A.S., Smithsonian Institution Building, Washington, D. C.

In requesting change of address, please give your old address as well as the new one, at least two weeks before change is to become effective.

Cable address: Scienserve, Washington.

Entered as second class matter at the postoffice at Washington, D. C., under the act of March 3, 1879. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature and in the Engineering Index.

Advertising rates on application. Member Audit Bureau of Circulation.

SCIENCE SERVICE is the Institution for the Popularization of Science organized 1921 as a non-profit corporation, with trustees nominated by the National Academy of Sciences, the National Research Council, the American Association for the Advancement of Science, the E. W. Scripps Estate and the journalistic profession.

MEDICINE

Remedy for Influenza Hinted in New Report

Chemical Related to Sulfanilamide Found Effective in Distemper, Which is Animal Equivalent of Influenza

HOPE that influenza can soon be cured or prevented by swallowing a few grains of a new chemical remedy appears in a preliminary report (*Science* Feb. 11).

The report does not mention human influenza but states that distemper has been prevented and cured by giving the chemical, sodium sulfanilyl sulfanilate to dogs, cats and ferrets. This work was done by Drs. A. R. Dochez and C. A. Slanetz, at the departments of medicine and of animal care of the College of Physicians and Surgeons, Columbia University, and Presbyterian Hospital.

Distemper has been called the canine counterpart of human influenza. Dr. Dochez has for years been searching for a way to conquer influenza and researchers both in this country and in England have studied canine distemper closely in the hope of finding a cure or preventive of the very similar human disease, influenza. It is safe to assume that Dr. Dochez' present investigations of distemper have been undertaken with the same hope of finding a cure or preventive for influenza.

The chemical which has been strikingly successful in curing and preventing distemper in animals is related chemically to sulfanilamide and Prontosil, chemical remedies that have proved valuable in streptococcus infection, gonorrhea and other germ diseases. Distemper, however, like influenza, infantile paralysis and epidemic encephalitis, is caused by another class of germ, a filtrable virus. Attempts to conquer the virus-caused diseases by chemical warfare have so far been largely unsuccessful. In their report Drs. Dochez and Slanetz state:

"Sodium sulfanilyl sulfanilate therefore appears to be the first chemical agent to have such definite therapeutic action in an infection due to a filtrable virus. The range of its activity remains to be explored."

The sodium sulfanilyl sulfanilate used in this distemper research was prepared by the Calco Chemical Company. It is a white crystalline substance, easily dissolved in water, and is neither acid nor alkaline. The dose for small animals is one gram per thouasnd grams of body weight—about seven grains to every pound. Cats, rabbits and ferrets have been given one gram of the chemical every day for two weeks without loss of weight, appetite or other untoward symptoms. The chemical circulates in the blood in high concentrations for relatively short periods of time. A large dose is completely excreted within 24 hours. Even a large dose did not produce any symptoms of intoxication or other bad after-effects in the animal.

Drs. Dochez and Slanetz do not, in this report, suggest that this chemical can be used for human influenza. It seems likely, however, that the present research will lead in the near future to trial, at least, of this or a similar drug for influenza treatment and prevention.

Dog and cat lovers, however, can probably immediately start using the new remedy for prevention or treatment of distemper, which is a serious plague of these animal pets. The scientists report that 18 cats "suffering from a spontaneous disease commonly known as cat distemper or influenza" have already been successfully treated with the new chemical. Of 28 dogs suffering from spontaneous canine distemper, 26 recovered after treatment with the chemical. The animals were treated at various stages of the disease. When given to dogs and ferrets after infection but before symptoms of distemper set in, the chemical has prevented development of the disease and the animals remained well.

Science News Letter, February 26, 1938

HOUSING

Low-Cost Farm Unit Built Wholly of Steel

MEMBERS of Congress and Department of Agriculture officials crowded around and asked questions on Friday, Feb. 11, as the Farm Security Administration held an informal dedication of its new all-steel low-cost farm building unit at the Greenbelt resettlement project.

Assembled within the past few weeks, the pre-fabricated farm unit, which comprises five structures, can be delivered unassembled for $2,000 when manufactured on a mass production basis, engineers for the builders claimed.

A five-room house, barn, smokehouse, poultry house and sanitary outhouse make up the farmstead, one of a number of experimental projects being carried out by the Farm Security Administrator in its attempts to develop low-cost farm housing.

The buildings are assembled from prefabricated panels four feet wide. The model was prefabricated by the Decatur Iron and Steel Company of Decatur, Ala., from material supplied by the Tennessee Coal, Iron and Railroad Company

Science News Letter, February 26, 1938

STEEL HOME AMONG THE PINES

Spartan in the simplicity of its outline as it is in the stuff from which it is made, this low-cost house is comfortable, clean and sanitary—and it will never be eaten by termites.

DENTISTRY

New Saliva Test Indicates Likelihood of Tooth Decay

Six Simple Rules Offered to Insure Tooth Health; Weather Conditions Possible Factor in Endocarditis

EVERY individual carries in his own saliva a clue on how well his teeth will last, according to research reported by investigators at the Northwestern University Dental School before the meeting of the Chicago Dental Society.

By making chemical tests on this previously hidden clue in the saliva, the Northwestern research group has been able to ascertain susceptibility to tooth decay with almost perfect accuracy in more than 750 cases. The technique gives dentists a new research method to study decay.

Dentists said that the new advance in the study of tooth decay will make it possible for future research workers to determine the exact effect of a particular food or a health measure on decay susceptibility. Eventually diet and other factors which may play a part in causing tooth decay can be controlled so that an individual may hope to be relatively free from tooth decay.

Go Easy on Concentrates

Already the Northwestern research group, which includes Dr. Edward H. Hatton, Robert H. Blackwell, Dr. L. S. Fosdick, Dr. H. O. Hansen, Dr. George W. Touscher and Charlotte Epple, have advanced tentative opinions on diet in a general way and tooth decay. They support these rules for teeth health:

1. Eat the simple, natural foods rather than the refined or processed foods.
2. Reduce refined and highly purified carbohydrates to the necessary minimum. This means cutting down on sweets and other "rich" foods.
3. Eat plenty of fresh fruits and vegetables to obtain the necessary vitamins and minerals.
4. Use a high supply of good grade protein foods, including milk, milk products and glandular meats, such as kidneys, liver and sweetbreads.
5. Take accessory vitamins only in off seasons when fresh fruits and vegetables are unavailable or expensive. Vitamins A and D may be given during the winter months.
6. Use mineral tablets, calcium or phosphorus only under professional direction.

The Northwestern group discovered differences in the comparative rates of acid production in saliva from decay-immune and decay-susceptible patients. Then they developed a chemical analysis which takes four hours so that the dentist can determine just what an individual's saliva will do.

The test itself is relatively simple. All the patient has to do is chew gum to stimulate saliva and the dentist obtains a small amount for three tests. One portion is used for a calcium analysis; another is tested for quantitative bacteriologic counts and the third is sealed in an eight-inch test tube with one-tenth gram of powdered human tooth enamel. This last test tube is kept at body temperature and shaken for four hours and then examined to see what it has done to the powdered enamel.

The saliva of persons immune to tooth decay dissolves practically no calcium, the scientists found, while the saliva of susceptible persons dissolves large amounts of calcium. It is on the basis of this reaction that the degree of susceptibility to tooth decay is estimated.

A method of checking decay that has already started in a tooth was reported by Dr. Bert G. Anderson of the Yale University School of Medicine. Results are similar to those seen in cases where decay has been arrested or checked spontaneously.

Smoothing Rough Places

Dr. Anderson removes the decay and those portions of the teeth that favor accumulation and retention of food and debris and smoothes them down so they can be used for chewing. This apparently gives a chance for natural forces to prevent any further decay in the particular tooth.

Chewing, Dr. Anderson believes, is an important aid to the arrest and healing of dental caries.

Weather conditions may play a part in causing endocarditis, a form of heart disease that is often related to focal infections of the teeth, Drs. William F. Peterson and Alexander Nedzel of Chicago stated.

Bacteria, Drs. Peterson and Nedzel believe, are likely to localize on the heart valves in late winter and spring and after periods when the blood pressure levels have been unusually high; in other words, when the valve flaps have been pressed together under greater pressure than normal. Study of case histories suggested the weather factor in the causes of the condition. By way of confirmation, the two scientists reported laboratory studies on animals.

The heart valves of the animals were "sensitized" by giving large doses of pitressin, which raises the blood pressure and "causes more brusque impingement of the heart valves against each other."

Such local injury would cause increased permeability and greater adhesiveness. Staphylococci and streptococci were then injected into the veins. When this was done during the winter a definite localization of bacteria on the heart valves followed and characteristic signs of endocarditis were observed.

The problem is of interest to dentists, it was pointed out, not only because the teeth often are the focus of infection which causes the heart ailment but because the heart ailment influences the type of treatment that is given.

Science News Letter, February 26, 1938

AVIATION

Two National Soaring Meets Planned for Present Year

TWO NATIONAL soaring meets will be held this year in place of the single national meet which has climaxed previous years of soaring, Dr. Karl O. Lange, vice-president and contest manager of the Soaring Society of America, has announced.

The 50 planes and 150 pilots that turned up at Elmira, N. Y., traditional home of sailplane contests in the United States, last summer so taxed the capacity of Harris Hill and the other points from which flights were made that novices and experienced pilots will be split up and will hold separate contests.

Novices will have their own meet from August 29 to September 7 at Frankport, Mich., under the title of the American Open Soaring Meet. The Ninth Annual Soaring Contest will be held at Elmira between June 25 and July 10. Pilots will have to meet qualifying tests sufficiently stiff to eliminate

all but skilled pilots using high-grade equipment.

American soaring has progressed to the point where minimum contest standards in effect for the national soaring meet next summer equal those in effect in Germany, homeland of motorless flight, Lewin B. Barringer, general manager of the Soaring Society of America, told its national convention.

Summarizing progress made during the past year, Mr. Barringer revealed that sailplane pilots must conform to minimum flight standards of five hours' duration, 3,500 feet for altitude or 35 miles for distance. The provision will eliminate all but high performance sailplanes from the meet.

A Soaring Society expedition will be based at Wichita Falls, Texas, from April 10 to May 8 to test flight conditions over the great Southwest plains area. The period of testing will be climaxed by a goal flight contest from Wichita Falls to Tulsa, Okla., a distance of 215 miles.

Science News Letter, February 26, 1938

ARCHAEOLOGY

Dead Men's Heads Carved On Ancient Temple in Peru

See Front Cover

DEAD men's heads on a prehistoric temple wall!

This is grim evidence of religious head-hunting in ancient Peru, reported by Donald Collier, young archoeologist, who has returned from making some remarkable discoveries in company with Peru's most noted achaeologist, Dr. Julio Tello. Mr. Collier, son of Commissioner of Indian Affairs, John Collier, is preparing his report for the Institute of Andean Research, which he represented.

The weird art subjects were discovered, Mr. Collier said, when the expedition unearthed a remarkable ceremonial terrace of stone on the coast of northern Peru. On some stones, they found carvings of warriors making vigorous gestures. Other portraits had no bodies but were mere cadaverous-looking faces "all cut off obviously under the chin."

"The supposition is that they had human sacrifice," he explained, "and one form was to take human heads—whether heads of their own people or those of enemies, we don't know."

Mr. Collier describes the stone temple, its art, and the cemetery nearby as all revealing a new kind of culture, unlike that of other Indians who lived in Peru before the great Incan Empire was formed. These ancient Indians who built the stone temple lived perhaps 600 A.D., or around 900 A.D.—dating them is mere guesswork, Mr. Collier says. Aside from three kinds of pottery buried in strata of earth, there is nothing to suggest passage of time, or any particular era.

This is the first discovery of a temple of giant stones on the coast land of Peru. Such temples were built in Peru's mountains, but coast tribes used adobe architecture.

"This is the first indication," he said, "that some of the highland people came to the coast to live and built a temple, because it must have taken several years to construct the terraced pyramid with these blocks ten feet high and several feet thick."

The mysterious stone workers had a highland background. But where they got their art ideas, and their plain style of pottery making, and their simple ideas of burial—very different from the elaborate mummy-wrappings of some Peruvian graves—is still to be traced, so that science may fit these unknown Indians into the pattern of Peru's prehistory.

Science News Letter, February 26, 1938

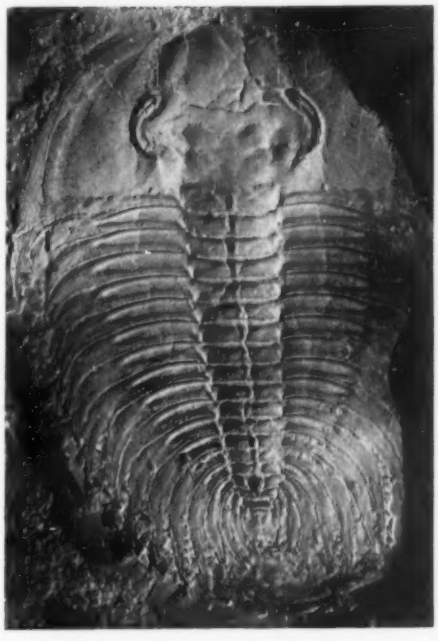
GEOLOGY

Ancient Rocks Identified By Two Trilobite Genera

ROCKS of a geological formation half a billion years old, scattered from Alabama to Labrador, have been identified as belonging to the same system by fossils they contain, of two genera of trilobites, which are distant relatives of lobsters and crabs, long since extinct. The rocks, of early Cambrian date, have also been shown to be similar to others in Scotland and Greenland.

The investigations were carried on by Dr. C. E. Resser of the U. S. National Museum and Dr. B. F. Howell of Princeton University. The key trilobites, whose flattened external skeletons were found in the rocks, belong to the genera *Wanneria* and *Olenellus*.

Science News Letter, February 26, 1938



CALENDAR MARKER

One of the trilobites that made possible the dating of widely separated sandstones as of the same age.

ETHNOLOGY

Pueblo War Songs Link Indians With Far East

EVEN in their music, American Indians have preserved small clues suggesting Oriental ancestry.

Not that Indians are to be thought of as descendants from Chinese or Japanese civilization. Their stemming off from an ancestral tree goes far back to Mongolian-type tribes that roamed to the northeast tip of Siberia and thence, from time to time, crossed into the northwest tip of Alaska. After that they were Americans, and their descendants "Indians." They brought some crafts and customs with them. They learned many new ones in America, and some groups like the Mayas evolved high civilization.

Anthropologists are greatly interested to detect what Indians owed to Asia, and from what parts of that homeland they gleaned their old culture.

Now, it develops that Indians in the Southwest had a psychological trick in war songs, of raising the song a semitone as it progressed and keeping it there to the end. It was exciting. And remarkably enough, Japanese used the same device in stirring warriors by song.

Miss Francis Densmore, who has studied music of many Indian tribes, first noted this similarity when Pueblos were singing old war songs recently for her to record. Reporting this and other similarities between Indian and Old

World music, Miss Densmore disclaims any intent to theorize on the Indians' past. She is merely presenting facts, which may have significance.

From an authority on Oriental music, Miss Densmore learned that Japanese got the idea of raised pitch in war singing from Chinese priests, who brought it from India in the seventh century. If Pueblo ancestors got the idea from a common source—or invented it—in the Old World, that must have happened far earlier. Pueblos were well established in the Southwest by that time.

GEOLOGY

Iron Masses Under Meteor Crater Shown Magnetically

Modern Prospecting Method Indicates Presence of Five Deeply Buried Fragments of Original Projectile

SCIENTISTS now have real evidence, for the first time in over 30 years of exploration, that there exist beneath Arizona's famed Meteor Crater large masses of what well may be parts of the giant meteor itself. Despite the name of the baffling giant pockmark in the earth's crust, scientists have not always been sure of this fact.

Yet scattered tiny surface fragments indicated that a meteor, containing 92 per cent. iron and 8 per cent. nickel, probably struck in that spot. And the veritable treasure of a tremendous deposit of almost pure iron buried beneath was an economic incentive which has attracted mining engineers to the spot.

Electrical Prospecting

New measurements, by electrical prospecting, have disclosed five giant masses of magnetic material—probably iron—lying 1,200 feet beneath the crater. Hans T. F. Lundberg, Canadian geologist, told of his discoveries at the recent New York meeting of the American Institute of Mining and Metallurgical Engineers.

Recurrently, through the years, drilling operations have sought to strike the supposed underground iron deposits which would bring wealth to the finder. But the fractured underground rock structure and swift currents of underground water hampered the work. Indeed, in 1931, drilling at the site was abandoned and geologists were about to place the mystery of the crater's origin among the unsolved problems of science.

Mr. Lundberg's new technique was to plot the area for more than a mile around the crater for its magnetic variations. If large masses of magnetic materials were buried deep underground they would produce magnetic anomalies in the observable magnetic field. Systematically plotting the whole area, Mr. Lundberg finally detected two anomalies directly under the crater and three others slightly south of it.

To explain previously the absence of large masses of the meteor geologists have suggested that the great meteor blasted out the crater and then—when it struck water underground—exploded into small fragments which were scattered about the neighboring region. Now, however, it appears that at least five large parts escaped this explosion and have penetrated to great depths.

Further electrical prospecting, suggests Mr. Lundberg, may now make it feasible to plan the exploitation of these rich iron deposits. Such prospecting would particularly seek to fix the paths of the underground streams hampering mining operations.

Indirect Approach

It might be best to sink a shaft away from the crater itself and then—at the proper depth—make a horizontal drift into the iron masses. Such drift operation is easier in water-carrying ground than is shaft sinking, says Mr. Lundberg. Work of this nature has been accomplished elsewhere by new sealing methods. "Is is now hoped," he adds, "that by this method the long searched-for meteor will be reached and the mystery of Meteor Crater solved."

Science News Letter, February 26, 1938

Beaver hats aided in exploration of America—the search for beaver pelts to make these fashionable hats led trappers and traders into various wilderness regions.

PHYSICS

New Swedish Process Freezes Salt From Ocean

SWEDEN has no salt and no fuel; the latter fact being significant because one can evaporate salt water if an abundance of fuel is at hand for a fire. Yet Sweden has an abundance of hydroelectric power and thereby has one key with which to unlock the doorway which guards the salty waters of its majestic fiords.

Sweden is now building an experimental factory on Gullmar Fiord in which salt will be produced by freezing. The U. S. Bureau of Mines reports that Gullmar Fiord contains a very high percentage of salt in its waters. At the experimental plant this water will be frozen by the abundant electric power in mechanical freezing units and a very concentrated salt solution thus obtained. This salty brine is then evaporated by heat, but much of the work of getting the final salt crystals has already been done by the freezing.

Science News Letter, February 26, 1938

EVOLUTION

Animals of Cooler Regions Larger Than Warm-Land Kin

SCIENCE now provides support for the common observation that races living on mountain heights or in northern latitudes are on the whole larger than those living at low levels and farther south. This opinion, usually held only as regards human beings, is extended to include animals as remote from man as birds and insects, in studies made by Prof. Theodosius Dobzhansky of the California Institute of Technology.

Prof. Dobzhansky bases his conclusions both on studies of specimens collected in the field and on the growth of a number of different kinds of organisms in the laboratory.

Races of mammals inhabiting cooler regions, although they may be in general larger, have shorter body appendages (tails, legs, ears) than races of the same species from warmer regions. Among birds the same is true for the relative lengths of beak, legs, and wings. Races of mammals and birds and some invertebrates living in cooler climates are larger in body size than races of the same species in warmer climates. In mountain countries races from higher elevations are larger than those from the lower ones.

Science News Letter, February 26, 1938

TO BE MINED FOR THE SKY'S IRON?

Airplane view of Meteor Crater, under and near which five large magnetic masses have recently been located by geophysical methods.

AVIATION

Tandem Propellers for Planes Turn in Opposite Directions

HIGH SPEED airplanes of the not-too-distant future may be pulled through the air by the whirling blades of tandem propellors mounted close together, one behind the other, and rotating in opposite directions on concentric propeller shafts.

Forced by the growing size and weight of propellers needed to deliver the full power of ever larger engines, U. S. Army aeronautical engineers at Wright Field, Dayton, Ohio, are experimenting with a set of such propellers and are planning the construction of two more sets for further study.

Two propellers mounted eight inches apart in tandem style would cut the size of the propeller in half. Propellers needed on the most powerful planes flown by the Army Air Corps are now 13 feet in diameter and are relatively heavy. More powerful engines contemplated by aeronautical engineers and a certain aviation development of the next few years will require larger propellers still.

The world airplane speed record, 440.681 miles per hour, set by Lt. Francesco Agello of Italy in October, 1934, is held by the only tandem propelled plane now flying. Designed to compete in the Schneider Trophy Races in England in 1931, the ship was not completed in time and was used instead for several successful assaults on the speed record. No other such plane is known to exist.

The most powerful engines in use today have about reached the limit in size of the accompanying propeller. The tandem propeller scheme is one possible attack on the problem of cutting down the size of the whirling blades.

The twin propellers being tested by the Army are of the fixed pitch type, Brig. A. W. Robins, chief of the Materiel Division of the Air Corps reports, while the two sets under design and construction are controllable. Construction of the propeller shafts, involving one shaft inside the other and rotating in opposite directions, represents a difficult engineering problem.

Science News Letter, February 26, 1938

RADIO

U. S. Joins 14 Other Nations Using Robot Radio Alarm

SAFETY at sea on American ships has now moved up to par with that of fourteen other nations by official approval of the robot radio alarm system which makes it possible for small freighters to detect SOS signals even though their single radio operator may be asleep in his bed. The Federal Communications Commission has approved for installation on American vessels the automatic radio alarm system that is already in operation on more than 3,000 vessels of other nations.

The radio alarm listens, thinks and acts in a way that truly makes it a robot mechanism. On completion of his watch the radio operator leaves the cabin and sets the alarm.

It is set to recognize a distress call of a series of dashes lasting four seconds each, spaced a second apart. It has a memory long enough to realize if four or more of these dashes come in sequence, when it rings a bell in the radio operator's room and also on the navigation bridge.

Finally the device also warns both the radio operator and the bridge officers when it fails to function.

The robot alarm, a product of the Radiomarine Corporation of America, is not designed as a substitute for radio operators but may be used by cargo vessels of over 5,500 gross tons employing only a single operator in order that a continuous radio watch can be maintained for distress signals.

Science News Letter, February 26, 1938

METALLURGY

Draw-Casting New Trick In Making Copper Rods

THE ART of making castings is old but there is a new technique which is only now coming into production. It is called draw-casting. It consists of drawing, directly from a bath of molten metal, rods and tubes of copper.

Dr. Byron E. Eldred, new president of the Engineers Club, New York City, and one of the nation's few remaining independent research scientists, is the inventor of draw casting.

Dr. Eldred melts his copper in a furnace which has one or more holes in the bottom. In each of these holes is inserted a copper rod that is going to be the "parent" of hundreds of feet of additional rod the same size. These parent rods are cooled by a surrounding water chamber and transmit their coolness up into the molten copper. Around each of their tips the melted metal starts to "freeze" and in turn becomes cooler. As the metal in the bath freezes, from the inside out as it were, the rods are pulled out and continually solidify more metal within the furnace.

Science News Letter, February 26, 1938

Night drivers travel five to ten miles an hour slower than daytime drivers.

MEDICINE

Chemical Remedy May Bring Cancer Control

CONTROL of cancer by a chemical remedy, perhaps one that can be taken by mouth, seems more probable than ever as a result of research reported by Dr. Leonell C. Strong of the Yale University School of Medicine (*Science*, Feb. 11).

No such human cancer cure has yet been obtained, and Dr. Strong's report is of research with mice only. When he fed these animals a chemical, heptyl aldehyde, along with an otherwise normal diet, however, the spontaneous tumors of the breasts of the mice softened, liquefied and regressed or disappeared completely.

Without referring at all to human cancer, Dr. Strong points out that his research "opens up the question that spontaneous tumors, in mice at least, may eventually be controlled by chemotherapy."

The research now reported is a sequel to previous work in which Dr. Strong found that feeding cancerous mice true oil of wintergreen caused softening and complete liquefaction of the tumors. The active agent in this oil, he has now found, is the chemical hepytl aldehyde. When he gave this chemical to the mice, the tumors liquefied so extensively that they could be drained or sucked up through a hypodermic needle. This drained-off liquid was tested bacteriologically by Dr. C. G. Burn and found to be sterile.

Science News Letter, February 26, 1938

HYDROLOGY

Wind Over Water Makes Slowly Turning Rollers

WIND over water causes the formation of huge, invisible, slowly turning rollers extending from the surface downward for a number of feet with the long axes of the rollers parallel to the direction of the wind.

A description and explanation of this phenomenon, by Dr. Irving Langmuir, Nobelist of the General Electric Company, appears in *Science* (Feb. 11).

Dr. Langmuir was stimulated to investigations of the phenomenon when he observed, during an ocean voyage, long parallel streaks of seaweed lying in the direction of the wind, with spaces of clear water between them. He reasoned that the seaweed had been carried to its position by surface currents moving across the wind, and that the streaks represented quiet water where the cross currents had come together and sunk, side by side.

Later, he carried on experiments on the sheltered waters of Lake George in New York. He used various things to keep track of the drift of the water along the surface, downward at the streaks, and up again in the spaces between. His experimental materials ranged from oil and the dyestuff fluorescein to white strings supported with corks and umbrellas with lamp bulbs as floats.

These watery rollers that the wind sets to rotating turn in opposite directions, one to the right, its neighbor to the left, and so on. The rotation is not truly in roller fashion, but rather with a helical, or corkscrew motion.

The motion is not powered directly by the push of the wind, but results from the cooling of the surface water. Cool water is denser than warm, so when it finds itself on top of warmer water it sinks, until it finds the level of its own density. In the meantime more water on the surface has been cooled to the sinking-point, and so the game goes on as long as the wind blows.

Science News Letter, February 26, 1938

ENGINEERING

Rare Earth Metal Makes Bearings Last Longer

INDIUM, a few years ago a chemical curiosity, extracted with great difficulty from rare minerals, is now a full-fledged industrial metal, with an ever-expanding use as an alloying agent for bearing metals.

Motor bearings, resisting millions of revolutions during the life of a car, are now being made even tougher by plating the bearing surface with indium, C. F. Smart, General Motors Corporation engineer, reported to the American Institute of Mining and Metallurgical Engineers. This surface coating makes the bearing metal resistant to corrosion by the acid oils now in common use in motor cars.

Until recently, babbitt metal, an alloy of tin, antimony and copper, was used for most high-speed bearings. Today, bearings are lined with silver-copper-cadmium, cadmium-nickel, and cadmium-zinc alloys, which are later electroplated with indium, increasing their resistance to oil corrosion.

Science News Letter, February 26, 1938

IN SCIENC

PSYCHOLOGY

Baby Cries Most During First Four Months of Life

PARENTS fast wearing down under the strain of the new baby's crying can look for some relief when he reaches the age of four months. This is the month when babies do the least crying, Drs. Mary Cover Jones and Barbara S. Burks found in research at the University of California's Institute of Child Welfare.

Before the baby is four months old, he cries because of internal hurts and bodily needs such as hunger or other discomforts. After the relatively quiet fourth month, baby starts to cry again but for different reasons. He is older now, has begun to take more interest in the world around him and his crying is stimulated by external causes. He now cries because he wants to be picked up and petted, or because he is angry.

Science News Letter, February 26, 1938

MEDICINE

Heart Pain Traced to Overweight in Many Cases

SEVERE chest pain resembling that of the dread heart malady, angina pectoris, is in many cases due to excessive overweight, Dr. William J. Kerr, professor of medicine in the University of California Medical School, has found.

The huge "bay window" of very fat men forces them to adopt an abnormal posture which cramps the chest, causes flaring of the lower ribs, fixes the diaphragm at a low position, thus producing breathlessness and preventing the heart from getting a normal supply of oxygen. Severe pain and low blood pressure in the standing position accompany the condition. The shortness of breath is marked only in the standing position which is contrary to the usual experience in heart failure.

The pain and other features clear up when the weight is reduced and the posture brought back to normal, Dr. Kerr discovered. Diet, properly fitted abdominal belts, and later postural exercises are used in the treatment.

Science News Letter, February 26, 1938

ICE FIELDS

MINERALOGY

Minerals Magazine Uses Fluorescent Pages

PRINT that glows brightly green on a black page when exposed to ultraviolet light, and is red on a white page under ordinary light, is featured in the February issue of *Rocks and Minerals Magazine*. Long a pioneer in the field of fluorescence, this magazine is among the first to feature pages that are printed in fluorescent ink.

Fluorescence, the ability of a substance to radiate visible light when exposed to invisible ultraviolet light, has been put to work recently in many industries to separate substances that look alike under ordinary light. Thus, zinc ores at Franklin Furnace, N. J., are separated from similar-appearing worthless rock, and tungsten ores in Nevada are identified with little trouble.

Science News Letter, February 26, 1938

ANTHROPOLOGY

Stone Age Man Had His Own Tooth Troubles

OUR Stone Age ancestors had plenty of tooth troubles— and the trouble wasn't all in the teeth of cave bears, saber-tooth tigers, and other super-dentalized neighbors, either. Stone Age greatgranddad's tooth troubles were right in his own head.

This information, debunking widespread ideas that primitives, eating rough and raw foods, always had perfect teeth, was laid before the American Association for the Advancement of Science by Prof. W. M. Krogman of Western Reserve University.

It is true that dental caries is rarer in the oldest human skulls, and that its incidence increases as one comes down the line toward more recent times. In the Old Stone Age, over a hundred thousand years ago, the frequency of dental caries ranged from five to 20 per cent. In the New Stone Age, twenty thousand years ago, the frequency rose to a range of 15 to 45 per cent.

"In the next succeeding ages," Prof. Krogman continued, "the frequency rose, until in 3500 B. C., just before the dawn of history, an early Iranian (Persian) people showed as high as 75 to 90 per cent. of the entire adult population afflicted with dental caries—a frequency as high as that of any 'civilized' group today."

And there weren't any dentists!

The false notion that primitive man always had perfect teeth got its start, Prof. Krogman pointed out, because archaeologists and curators always picked out "pretty" skulls for museum display. Now they keep the imperfect specimens, too—and frequently learn more from faults than they do from perfections.

Not civilization as such, but domestication, is the thing that has played havoc with man's teeth, Prof. Krogman declared in conclusion. And domestication started thousands, perhaps millions of years ago. For all our energetic fussing with vitamins and mineral foods and the like, our teeth keep right on going to the bad. It's all very discouraging.

Science News Letter, February 26, 1938

ENGINEERING

Britain to Follow Trend To Streamlined Trains

AFTER lagging a bit behind the United States and Germany in streamlined railroad trains, Great Britain is apparently on the way to follow the modern trend in what was once known as the iron horse.

Extensive wind tunnel tests have been reported by F. C. Johansen, engineering research officer of the London, Midland and Scottish Railway, to Great Britain's Institution of Mechanical Engineers.

A conventional British type train, it was found, has half its total drag caused by air resistance when the speeds are 80 miles an hour and above. The air resistance could be reduced 50 per cent. without too drastic departure from conventional design and could be reduced 75 per cent. by ideal streamlining, it was discovered.

The most hindering kind of wind was not one which came directly head on, as one might at first suspect, but which came in a quartering direction from ahead at an angle of from 30 to 60 degrees.

Surprisingly enough, the gaps between separate coaches in the train offered relatively little air resistance; but of great importance was the large drag caused by the trucks and undercarriage structure of the cars and engines. This last point was especially pronounced in a quartering or side wind.

Science News Letter, February 26, 1938

MEDICINE

Two New Heart Drugs Found in Experiment

TWO NEW drugs for treatment of heart disease which are 20 times as safe in relation to effectiveness as any previously known have just been found, Prof. Maurice G. Visscher, head of the department of physiology of the University of Minnesota, has announced.

The two new drugs were found during tests of 100 drugs in a study in which for the first time an animal's heart and lung were kept alive 24 hours after removal from the body in order to observe the relation of energy input and output of the heart.

Names of the drugs are being kept secret until clinical tests corroborate the experimental findings. They belong to the same group as digitalis, having a phenanthrene nucleus. Other related drugs include ouabain, squill, and certain poisons from the skin of the common toad, long used in Chinese folk medicine.

More than 250 hearts and lungs (the lungs to furnish oxygen for the hearts to burn) were placed in watertight glass containers. Glass and rubber tubes, simulating the arteries and veins of the body, were attached, and readings taken of the normal functioning of the heart. After about an hour, by which time the heart had begun to fail, a drug was added and its action noted.

"Under sterile conditions," Prof. Visscher said, "we could have kept the hearts alive for longer than 24 hours. However, by that time we had had all the information needed."

Science News Letter, February 26, 1938

FOUNDATIONS

Swedish Manufacturer Endows Science Foundation

NEW financial encouragement for scientific work will soon be forthcoming as a result of the endowment, by Dr. and Mrs. Alex L. Wenner-Gren, of a $1,000,000 foundation, to be known as the Wenner-Gren Society, for furthering scientific research.

Dr. Wenner-Gren, Swedish industrialist and president of the Electrolux Company, has donated 25,000,000 Swedish kroner, ($1,000,000), in bonds and securities yielding over 1,000,000 kroner ($40,000) a year, as the society's endowment. Natural sciences, medicine, economic and social problems will be the chief concern of the society.

Science News Letter, February 26, 1938

ASTRONOMY

Spring Comes

March 21, Officially Considered First Day of Spring, Was Also New Year's Day to Peoples of Antiquity

By JAMES STOKLEY

MARS, namesake of the month of March, is the only planet visible through the month this year. And even its ruddy light disappears early in the evening, so that it is not shown on the accompanying star maps. In the last few days of the month it will be possible to get a glimpse of Mercury, closest to the sun of all the solar family. Mercury will appear low in the western sky just as it is getting dark. Venus and Saturn are now too near the sun to be seen at all, while Jupiter rises an hour before the sun.

Among the distant stars, which appear this month, are the conspicuous groups of winter, now sinking in the southwest. These are depicted on the maps, as at 10:00 p. m. on the first, 9:00 p. m. on the 15th, and 8:00 p. m. on the 31st. Chief among them is Orion, with three stars in a row to form the warrior's belt.

Taurus High in West

Taurus is high in the west, with Aldebaran to indicate the eye of this bull. In the southwest is Sirius, in Canis Major, the great dog. Still higher is the lesser dog, Canis Minor, with the star called Procyon. Nearly overhead are the two stars of similar brilliance marking the twins, Gemini, or Castor and Pollux. The latter, the brighter, is to the south. High in the west, above Taurus, is Auriga, in which Capella shines.

To the northeast is the great dipper, which is part of Ursa Major, the great bear, swinging up much higher than it has been in recent months. The pointers, which are marked, show the direction of the Pole Star, itself at the end of the little dipper's handle, and part of the little bear. Low in the northwest is Cassiopeia, the queen, a constellation which now has the shape of a W turned on the side, the top to the right.

By following the curve of the handle of the great dipper to the south, we are easily led to Arcturus, in Bootes, and still farther south to Spica, of the virgin, Virgo. To the right of Virgo is a characteristic little group of four stars in Corvus, the crow, sometimes referred to as "the cutter's mainsail," which they much more nearly resemble.

If the line from the pointers is drawn southwards instead of northwards, we come to Leo, the lion, which has two characteristic sub-groups. One, to the left, is a right triangle; the other is shaped like a question mark in reverse. It is called the Sickle, and Regulus stands at the bottom of the handle.

Mohammedan New Year

When the moon is new on March 2, it will, for Mohammedans, mark the beginning of a new year, 1357, counted from the Hegira, or Mohammed's flight from Mecca, in 622 A. D. Unlike ours, the Mohammedan calendar is a lunar one, and that explains why 1357 added to 622 does not equal 1938, but 1979.

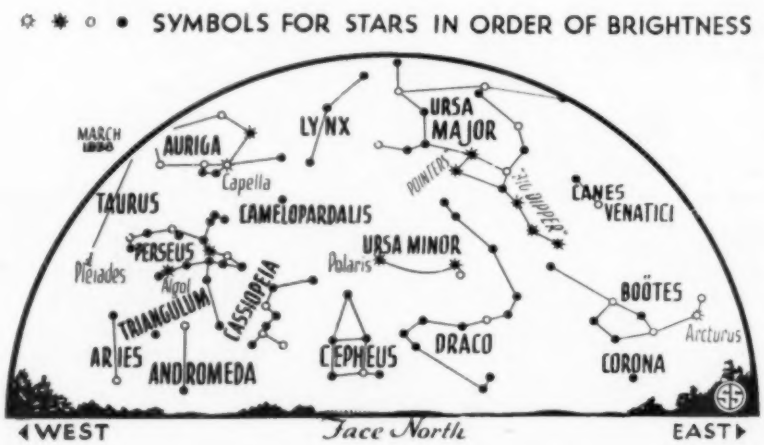
If you count the time it takes the moon to return to any particular phase, you will find that it is 29½ days, known as the "synodic," or often merely the "lunar" month. Many calendars have used this period in their reckoning, because the changing phases of the moon in the sky afforded a convenient means of telling the days. The Mohammedan year has twelve months, alternating between 29 and 30 days, making the average the correct length. Every month starts with the new moon, as it first appears in the west after sunset. Then first quarter, full moon and last quarter mark the four weeks of the month.

But twelve 29½ day months total only 354 days, which is 11 days short of the year. Consequently, this means that Mohammedan dates shift around through the seasons. For instance, in 1939, the Mohammedan year will commence eleven days earlier, on Feb. 20. In 1955 it will come early in the autumn, and in 1971 it will again come at the time it does this year. Thus, their calendar gains a whole year on ours every thirty-three years. No doubt we should find this very inconvenient, not knowing what season a certain date might be in, but in Moslem countries it is often very arid, with little change between the seasons.

Thirteenth Jewish Month

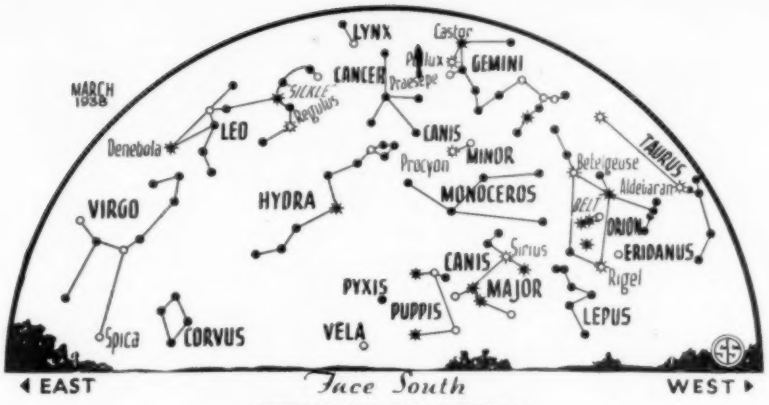
The Gregorian calendar, which we use, keeps step with the sun and ignores the moon, but it is possible to have one that will keep in step with both. A good example is the Jewish calendar. Ordinarily the Jewish year is practically the same as that of the Moslems, but after approximately three years, when it has lagged a month behind, an extra month is inserted which brings it up again. Actually, there are seven of these thirteen-month years every 19 years.

In the Jewish calendar, the present year, 5698, is a leap year, and the thirteenth month, Adar Sheni, coincides



THE DIPPER INVERTED

If we have heavy rains, there will be those who will say that the water poured out of that upside-down bowl.



SPRING STARS APPEAR

In a sky without planets, the Hunter descends the western sky, while in the east the Virgin follows the Lion.

closely with March. It starts with sunset on March 3, when it should be possible to get a first glimpse of the narrow crescent moon low in the western sky.

The early Roman calendar was a lunar-solar one, very similar to that used today by the Jews. But instead of having regular rules governing the insertion of the extra month, it was left to the officials to have one when needed. Thus it became a very convenient tool for graft, as extra taxes might be collected, to fill the collector's pocket, by the simple expedient of having a leap year. Abuses such as this led to the reform of the calendar by Julius Caesar in 45 B. C., with the aid of an astronomer named Sosigenes.

Regulating the Calendar

After all, the calendar is a time-keeping instrument, like a clock. When a clock is fast, or slow, it is necessary to set the hands, so that they will indicate the correct time, then to adjust the pendulum, making it run faster or slower, in order that it will keep better time in the future. Caesar did these two things. To set the calendar he decreed the "Year of Confusion," which, with 445 days, brought the beginning of spring back to March 25, where it had been formerly. He ignored the moon and divided the year into the twelve months we have today.

Being advised that the correct length of the year was 365¼ days, he introduced the leap year. With three years of 365 days, the fourth of 366, the average was the desired figure. But, actually, 365¼ days is about 11 minutes 14 seconds too much, and over the ages this accumulated until after the year 1500 the equinox came on the 12th instead of the 25th.

In 325 A. D. the council of Nicaea had set the rule for determining the date of Easter—"The first Sunday after the first full moon after March 21"—that date being chosen because it was then the equinox. But as the equinox came earlier in the calendar, March 21 came later in the season, it would eventually have come at the beginning of summer, and Easter would have been celebrated in summer-time, even though it is essentially a festival of spring.

Accordingly, in a papal bull issued Feb. 5, 1582, Pope Gregory XIII decreed further changes. To set the clock, October 4, 1582, was immediately followed by October 15. This dropping of ten days returned the equinox to March 21.

To regulate it, the leap year rule was amended. Up to then, every fourth year, or every year divisible by 4, had been a leap year. By the Gregorian rule, however, an exception is made in the case of century years (e. g., 1900) which are leap years only if divisible by 400. This was a great improvement, for now the average length of the year is only 12 seconds in error, which will not amount to a day until 7200 years have passed.

New Year's Day Shifts

Under a Roman practice which was changed about a century before Caesar but which was revived for a time several centuries ago, the year began in March, at time of the vernal equinox, instead of in January. That is the reason for the names of such months as "November," which really means the ninth month, though it is the eleventh.

Under this old practice, therefore, we would be starting 1938 on March 21, at 1:43 a. m., eastern standard time, which is the equinox this year. At that moment the sun will be vertically over the equator. But for us it is not the beginning of the year, but only of spring, an event which is doubtless equally welcome to many.

Phases of Moon

		E.S.T.
New	Mar. 2	12:40 a. m.
First Quarter	Mar. 9	3:35 a. m.
Full	Mar. 16	12:15 a. m.
Last Quarter	Mar. 23	8:06 p.m.
New	Mar. 31	1:52 p.m.

Moon in perigee (nearest earth), March 11, 3:00 a. m., 229,500 miles away.

Moon in apogee (farthest away), March 23, 4:00 p. m., 251,100 miles away.

Science News Letter, February 26, 1938

ILLUMINATION

New Lamps Join Familiar Bulbs to Brighten Life

GLOWING vapors and gases are painting our night life with new splotches of colored light. And illuminating engineers in their laboratories are devising new kinds of electric lamps that may soon emerge to usefulness, just as sodium's yellow glow and neon's reddish luminosity have become familiar.

Familiar incandescent lamps remain the backbone of our artificial lighting. But glowing vapor is much more efficient than incandescent metal filament.

The mercury lamp with its greenish blue has long been familiar in shops where detailed work is done and color is no concern. The sodium lamp with its one yellow colored light is coming into use for highway and other outdoor illumination.

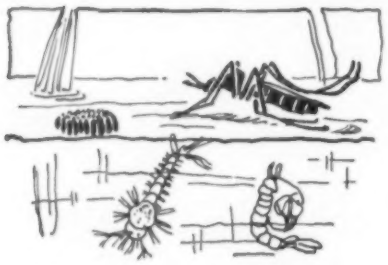
And this strange monochromatic illumination, under which most objects lose their colors and human faces take on a corpse-like pallor, has the greatest possibilities of high efficiency, just because the sodium vapor spends all the energy given it upon one wavelength of light. A sodium lamp of 180 watts gives as much light as a tungsten filament incandescent lamp of 500 watts, or nearly three times as much light per watt.

Science News Letter, February 26, 1938

WILDLIFE MANAGEMENT

NATURE RAMBLINGS

by Frank Thone



Mosquitoes and Ducks

CREATORS of watery refuges for ducks and other forms of aquatic wildlife should take heed lest they raise malaria mosquitoes along with the ducks, warned Dr. L. L. Williams, Jr., of the U. S. Public Health Service, speaking before the Third Annual North American Wildlife Conference.

Much of the Midwest was once malaria country, Dr. Williams stated. In the course of settlement and development of agriculture the old breeding waters of the mosquitoes were drained. Now the program for the restoration of American wildlife calls for the development of many new ponds and marshes where wildfowl, fish, and other water-using creatures may feed and breed.

If these refuges are near human habitations, especially if they are in areas used for camping or resort purposes, a very few human malaria carriers might equip the "right" kind of mosquitoes for serious trouble-making, the speaker pointed out. He added that something of this kind has already occurred in several places.

Dr. Williams' discussion was one contribution in a very lively panel discussion of the whole mosquito control problem, in which his co-participants were Clarence Cottam of the U. S. Biological Survey, Dr. F. C. Bishopp of the U. S. Bureau of Entomology and Plant Quarantine, and William Vogt of the National Association of Audubon Societies. General discussion from the floor followed, and was at times quite vigorous.

The principal bone of contention was over the question, to drain or not to drain. Nobody had a good word to say for the mosquito, but many of the friends of wildlife feel that drainage as practiced at present is destroying great areas that have in the past been dependable providers of sport and food.

Mr. Cottam pointed out that in the coastal area from New Hampshire to Maryland a total of 30,000 miles of drainage ditch has been dug, with an additional 36,000 miles in the South. Much of this, he believed, was unnecessary.

Unrestricted drainage not only removes the water that wildfowl like and fish must have; it also upsets the whole biological balance. As the soil dries out the marsh grasses and other good food plants perish, to be replaced with weed species that will not support wildlife. Small forms of lower animal life, used as food by wildfowl, also disappear.

Use of oil to smother mosquito larvae came in for condemnation second only to that bestowed on excessive drainage. It was pointed out that equally effective mosquito control can be achieved by spreading Paris green, pyrethrum powder, and other insecticides. In rebuttal to this it was urged that for many large areas where control is needed these methods are too costly.

However, differences do not appear to be beyond reconciliation, the floor discussions showed.

Science News Letter, February 26, 1938

•First Glances at New Books

Physiology

LOVE AND HAPPINESS: INTIMATE PROBLEMS OF THE MODERN WOMAN—I. M. Hotep—*Knopf,* 242 p., $2. Using the name of the earliest known physician, Imhotep, the medical demigod of ancient Egypt, a modern physician writes understandingly and helpfully for modern women, from the 15-year-old worrying over the question of petting and necking to the 40-year-old and older woman, married, unmarried or widowed, who is seeking love and happiness. The book is full of sound, practical advice for women but it also contains much information that might prove useful to parents, teachers, husbands and lovers of women.

Science News Letter, February 26, 1938

Psychology

SOCIAL BEHAVIOR AND CHILD PERSONALITY—Lois Barclay Murphy—*Columbia Univ.,* 344 p., $3.50. A detailed study of the way in which children in the nursery school react to fellow inhabitants of their world as compared with the world of adults. In addition to studying aggressiveness, resistance and conflict, other social responses such as sympathy, cooperation and friendliness are given particular attention in the studies reported.

Science News Letter, February 26, 1938

Nutrition

NUTRITION, FINAL REPORT OF THE MIXED COMMITTEE OF THE LEAGUE OF NATIONS ON THE RELATION OF NUTRITION TO HEALTH, AGRICULTURE AND ECONOMIC POLICY—League of Nations—*Columbia Univ. Press,* 327 p., $2. Feeding the world is viewed from a broad scientific and economic standpoint in this significant report by international authorities.

Science News Letter, February 26, 1938

Nursing

PSYCHIATRIC NURSING—Katharine McLean Steele—*F. A. Davis,* 370 p., $3.50. A textbook by the superintendent of nurses at the Worcester, Mass., State Hospital.

Science News Letter, February 26, 1938

Veterinary Medicine

DISEASES AND SURGERY OF THE DOG, ALPHABETICALLY ARRANGED — Raymond J. Garbutt—*Orange Judd,* 332 p., illus., $3.50. "Vet" and kennelman alike will find this book very valuable. Its discussions and descriptions are terse and clear, its recommended remedies standard and practical. Quality of illustrations is generally poor; it is to be hoped that in a future edition these will be brought up to the level of the text.

Science News Letter, February 26, 1938

Exploration—Biography

CONQUEROR OF THE SEAS: THE STORY OF MAGELLAN—Stefan Zweig—*Viking,* 335 p., $3.50. Vividly told story of one of the boldest men the world has ever known. His present biographer, however, almost withholds the very crown of Magellan's credit, showing that this great captain, though hardy, was credulous, and practically blundered into his greatest discovery through trusting an egregiously erroneous map.

Science News Letter, February 26, 1938

Ornithology

STRANGE BIRDS AND THEIR STORIES—A. Hyatt Verrill—*L. C. Page,* 203 p., $2.50. A new book of bird biographies that goes into the jungles of the tropics for most of its wonders. Nevertheless, the author does find a considerable number of temperate-zone birds sufficiently remarkable to merit discussion. The text illustrations (there are scores of them) are by the author; in addition, there are a number of colored plates.

Science News Letter, February 26, 1938

Dendrology

TREES OF NORTHEASTERN UNITED STATES, NATIVE AND NATURALIZED (Rev. and enl. ed.)—H. P. Brown —*Christopher,* 490 p., illus., $3. This book originally started out as a dendroflora of New York State. However, since that remarkably diversified region comes so near being a complete botanical "sample" of the whole Northeast, it was but a logical step to extend its ambit. The method followed is practically standardized now, and a good one: a page of descriptive text faced by a full-page line illustration showing all critical points.

Science News Letter, February 26, 1938

Electrical Engineering

ARMATURE WINDING—David P. Moreton, Carl H. Dunlap, L. R. Drinkall—*American Technical Society,* 280 p., illus., $2. Detailed technical information of value to electrical engineers.

Science News Letter, February 26, 1938

Astronomy

THE OBSERVATIONAL APPROACH TO COSMOLOGY — Edwin Hubble — *Oxford Univ. Press,* 68 p., $2.50. Price changed from first announced price of $4.

Science News Letter, February 26, 1938

History

"SO YOU THINK IT'S NEW"—Wilfred J. Funk—*Funk and Wagnalls,* 198 p. illus., $1.75. Gaily and humorously, Dr. Funk of dictionary fame tells us how modern the ancients really were. The Romans put up a snappy game of draughts. The Greeks were mildly crazy on the subject of diets. Rome had speakeasies. Medieval Germany worried over a nudist problem. And to convince skeptics who may doubt life was that interesting, Dr. Funk adds a bibliography, representing a few high spots of his learned sources.

Science News Letter, February 26, 1938

Mythology

LOST ATLANTIS — James Bramwell—*Harper,* 288 p., $2.75. Weirdly interesting, supported by a few facts and many fantasies, the legend of Atlantis will not die. At times almost mystical in its approach to the problem of the legendary continent, this book is interesting reading, enlivened by the author's well-developed sense of humor. Still, despite the massive bibliography and extensive quotations of source material, Atlantis is seen "through a glass, darkly."

Science News Letter, February 26, 1938

Archaeology

ARCHAEOLOGY AND THE BIBLE (7th ed., rev.) — George A. Barton — *American Sunday-School Union,* 607 p., 138 plates, $3.50. This well known reference work continues to provide Bible students with an impressive amount of archaeological information, brought very carefully up-to-date. This new edition includes writings unearthed at Ras Shamra, the much-discussed Chester Beatty papyri, and compact descriptions of latest digging at Bible sites.

Science News Letter, February 26, 1938

Anthropology

CULTURE ELEMENT DISTRIBUTIONS: VI, SOUTHERN SIERRA NEVADA—Harold E. Driver—*Univ. California Press,* 101 p., map, $1. A study, mainly statistical, showing how various cultural traits of Indian groups are distributed in a given region.

Science News Letter, February 26, 1938

Anthropology

CULTURE ELEMENT DISTRIBUTIONS: VII. OREGON COAST—H. G. Barnett—*Univ. California Press,* 49 p., 50 c. Another of the anthropological tabulations, to show distribution of Indian culture traits.

Science News Letter, February 26, 1938

We are pleased to Announce

THE NEW ARGUS

MICROFILM READER

As Developed From Dr. Draeger's Design and Made Under the Direction of Science Service

THIS reading machine is designed especially for use with the internationally standardized 35 mm. microfilm such as produced by Bibliofilm Service. It magnifies the image 12 diameters upon a screen of superior definition, making microfilm easier to read in many cases than the original material. Mere turning of the handle changes the pages forward or backward with great speed. Short strips of microfilm can be placed in it with facility, while long runs of up to 1500 pages, upon reels, can be placed on the machine in a few seconds. Positive and negative microfilm can be read with ease. Special features include:

The unique revolving head allows the reading of microfilm whatever the orientation of the image upon the film.

The machine is also a wall *projector*, since the

(CONTINUED ON NEXT PAGE)